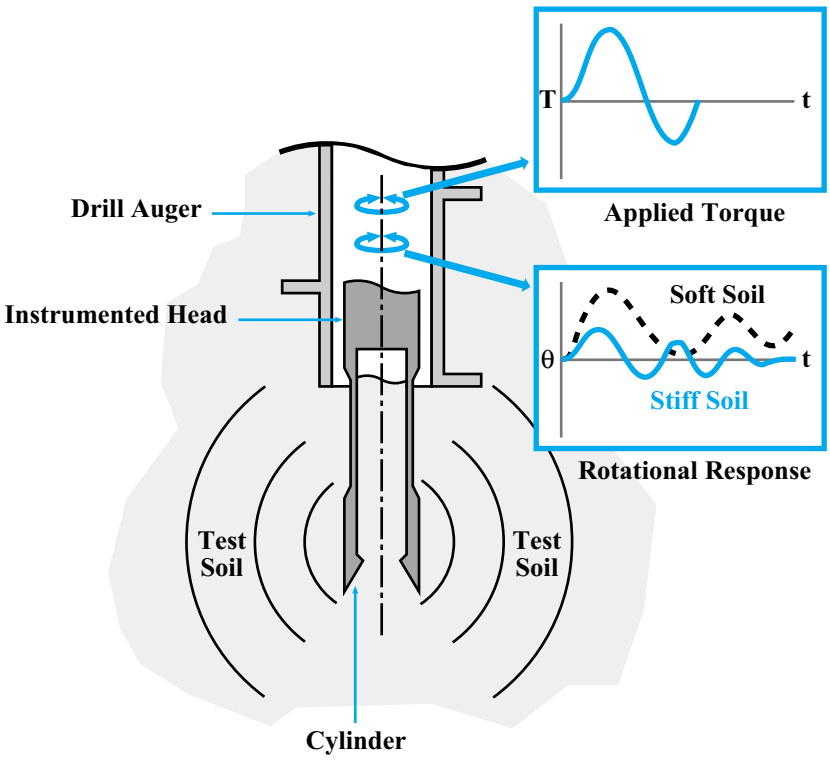
Torsional Cylindrical Impulse Shear Soil Test For Earthquake Design

Advanced Soil-Testing Technique Offers Potential for Lowering the Cost of Building Earthquake-Resistant Structures

With assistance from the Department of Energy's Inventions and Innovation Program, Dynamic In-Situ Geotechnical Testing, Inc., designed and tested a new soil-testing system for engineering new structures. Its Torsional Cylindrical Impulse Shear system creates and measures an impulse soil shear to gather data for critical structural designs (e.g., oil pipelines, power plants, bridges). The new system is potentially better than previous methods because testing is conducted onsite without disturbing the soil to the point of skewing results. The improved data is vital to structural and safety engineers who must design foundations and structures considering the strength of the soils on which a facility rests. Raising the level of certainty about soil characteristics in both low-and high-activity seismic zones can prevent overbuilding and wasting energy and material resources. In active seismic zones, better designed structures will minimize disruption of vital services. The Federal Highway Administration, Florida Department of Transportation, and National Science Foundation have all implemented system tests.



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Overview

- Developed by Dynamic In-Situ Geotechnical Testing, Inc.
- Market introduction in 1992

Applications

Engineering structures and infrastructure for industrial manufacturing facilities, utilities, and the oil and gas industry

Capabilities

- Furnishes reliable site data on soil characteristics using a less-destructive method that improves accuracy.
- Tests provide soil data for seismic resistant design.

Benefits

Product Quality

Increases safety and reliability of structures, especially those located in seismically active areas.

Energy Savings

Accrue indirectly from the ability to design structures with greater certainty using the most appropriate materials.

Emissions Reductions

Offshore oil and gas rigs and pipelines built to better standards lessen the chances of catastrophic failures and major fuel spills.

Technology No Longer Commercially Available